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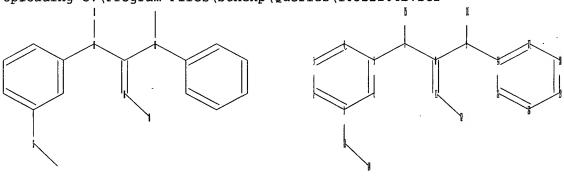
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chain nodes :

7 8 9 11 12 13 14 15 16

ring nodes :

1 2 3 4 5 6 10 17 18 19 20 21

chain bonds :

1-13 5-7 7-8 7-15 8-9 8-11 9-10 9-16 11-12 13-14

ring bonds :

1-2 1-6 2-3 3-4. 4-5 5-6 10-17 10-21 17-18 18-19 19-20 20-21

exact/norm bonds :

1-13 5-7 7-8 8-9 8-11 9-10 9-16 13-14

exact bonds :

7-15 11-12

normalized bonds :

 $1-2 \quad 1-6 \quad 2-3 \quad 3-4 \quad 4-5 \quad 5-6 \quad 10-17 \quad 10-21 \quad 17-18 \quad 18-19 \quad 19-20 \quad 20-21$ 

Match level :

1:CLASS 2:CLASS 3:CLASS 4:CLASS 5:CLASS 6:CLASS 7:Atom 8:Atom 9:Atom

10:CLASS 11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:CLASS 18:CLASS

19:CLASS 20:CLASS 21:CLASS

## L1 STRUCTURE UPLOADED

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L1 STR

Structure attributes must be viewed using STN Express query preparation.

=> s L1 full

FULL SEARCH INITIATED 09:09:13 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 499 TO ITERATE

100.0% PROCESSED 499 ITERATIONS

ITERATIONS 78 ANSWERS

SEARCH TIME: 00.00.01

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L4 24 L3

=> d L4 1-24 bib abs

L4 ANSWER 1 OF 24 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2006:1204362 CAPLUS

DN 145:505331

TI Substituted indole compounds having NOS inhibitory activity and their preparation and pharmaceutical composition

IN Maddaford, Shawn; Ramnauth, Jailall; Rakhit, Suman; Patman, Joanne;
 Renton, Paul; Annedi, Subhash C.

PA Can

SO U.S. Pat. Appl. Publ., 129pp. CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

| PATENT NO.                               | KIND    | DATE                 | APPLICATION NO. | DATE     |
|--|---------|----------------------|-----------------|----------|
| PI US 2006258721<br>PRAI US 2005-670856P | Al<br>P | 20061116<br>20050413 | US 2006-404267  | 20060413 |
| GT                                       |         |                      |                 |          |

$$R^{4}$$
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 $R^{2}$ 
 $R^{7}$ 
 $R^{1}$ 
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AB The invention features compds. of formula I as inhibitors of nitric oxide synthase (NOS), particularly those that selectively inhibit neuronal nitric oxide synthase (nNOS) in preference to other NOS isoforms. The NOS

inhibitors of the invention, alone or in combination with other pharmaceutically active agents, can be used for treating or preventing conditions such as, for example, stroke, reperfusion injury, neurodegeneration, head trauma, CABG, migraine headache with and without aura, migraine with allodynia, central post-stroke pain (CPSP), neuropathic pain, morphine/opioid induced tolerance and hyperalgesia. Compds: of formula I wherein R1 is H, (un) substituted C1-6 alkyl, (un) substituted C1-4 alkylaryl, and (un) substituted C1-4 alkylheterocyclyl; R2 and R3 are independently H, halo, (un)substituted C1-6 alkyl, (un) substituted C6-10 aryl, (un) substituted C1-4 alkylaryl, (un) substituted C2-9 bridge heterocyclyl, etc.; R4 and R7 are independently H, F, C1-6 alkyl, and C1-6 alkoxy; R5 is H, R5AC(NH)NH(CH2)r, and R5ANHC(S)NH(CH2)r; r is an integer from 0 to 2; R5A is (un) substituted C1-6 alkyl, (un) substituted C6-10 aryl; (un) substituted C1-4 alkylaryl, etc.; R6 is H, R6AC(NH)(CH2)r and R6ANHC(S)(CH2)r; R6A is equal to R5A; and their pharmaceutically acceptable salts and prodrugs thereof are claimed. Example compound II was prepared by N-alkylation of 6-nitroindole with N,N-dimethyl-2-chloroethylamine; the resulting N-(2-dimethylaminoethyl)-6-nitroindole underwent reduction to give the corresponding 6-aminoindole derivative, which underwent addition to thiophene-2-carboximidothionic acid Ph ester hydrobromide to give compound All the invention compds. were evaluated for their NOS inhibitory activity. From the assay, it was determined that compound II exhibited IC50 values of 8.8 μM against Rat nNOS, 109 μM against Murine iNOS, 211 μM against Bovine eNOS, 1.2 μM against Human nNOS, 60 μM against Human iNOS and 15  $\mu M$  against Human eNOS.

- L4 ANSWER 2 OF 24 CAPLUS COPYRIGHT 2007 ACS on STN
- AN 2006:303970 CAPLUS
- DN 145:505191
- TI Synthesis and characterization of N-[2-chloro-5-(methylthio)phenyl]-N'-[3-(methylthio)phenyl]-N'-[11C]methylguanidine [11C]CNS 5161, a candidate PET tracer for functional imaging of NMDA receptors
- AU Zhao, Yongjun; Robins, Edward; Turton, David; Brady, Frank; Luthra, Sajinder K.; Arstad, Erik
- CS Hammersmith Imanet, London, W12 ONN, UK
- SO Journal of Labelled Compounds and Radiopharmaceuticals (2006), 49(2), 163-170
  CODEN: JLCRD4; ISSN: 0362-4803
- PB John Wiley & Sons Ltd.
- DT Journal
- LA English
- N-Methyl-D-aspartate (NMDA) receptors play a key role in excitatory neurotransmission and are linked to a variety of acute and chronic neurodegenerative diseases including epilepsy, schizophrenia, Parkinson disease, and drug abuse. N-[2-Chloro-5-(methylthio)phenyl]-N'-[3-(methylthio)phenyl]-N'-methylguanidine (CNS 5161) is a high affinity ligand (Ki = 1.87 nM) for the NMDA PCP site, which potentially can be used for functional imaging of this receptor. Herein, we report the synthesis of the corresponding positron emission tomog. (PET) tracer [11C]CNS 5161 by [11C]methylation of the desmethyl guanidine precursor. [11C]CNS 5161 was synthesized with a decay corrected radiochem. yield of 10% within 45 min after end of bombardment (EOB). The final product was prepared in a sterile saline solution suitable for clin. studies with a radiochem. purity of >96% and a specific activity of 41 GBq/mmol at time of injection.
- RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT
- L4 ANSWER 3 OF 24 CAPLUS COPYRIGHT 2007 ACS on STN
- AN 2004:1059129 CAPLUS
- DN 142:32998
- TI Compositions of a cyclooxygenase-2 selective inhibitor and a cannabinoid agent for the treatment of central nervous system damage
- IN Stephenson, Diane T.; Taylor, Duncan P.
- PA Pharmacia Corporation, USA

SO PCT Int. Appl., 177 pp. CODEN: PIXXD2 DTPatent English LΑ FAN.CNT 1 PATENT NO. KIND DATE APPLICATION NO. DATE --------------20040526 PΙ WO 2004105699 A2 20041209 WO 2004-US16496 WO 2004105699 A3 20051215 W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG 20060720 US 2004-854586 A1 20040526 US 2006160776 PRAI US 2003-473820P P 20030528 MARPAT 142:32998 OS The present invention provides compns. and methods for the treatment of AB central nervous system damage in a subject. More particularly, the invention provides a combination therapy for the treatment of a central nervous system ischemic condition or a central nervous system traumatic injury comprising the administration to a subject of a cannabinoid agent in combination with a cyclooxygenase-2 selective inhibitor. ANSWER 4 OF 24 CAPLUS COPYRIGHT 2007 ACS on STN L42004:814610 CAPLUS ANDN 142:459221 In vivo evaluation of [11C]N-(2-chloro-5-thiomethylphenyl)-N'-TI (3-methoxy-phenyl)-N'-methylguanidine ([11C]GMOM) as a potential PET radiotracer for the PCP/NMDA receptor Waterhouse, Rikki N.; Slifstein, Mark; Dumont, Filip; Zhao, Jun; Chang, ΑU Raymond C.; Sudo, Yasuhiko; Sultana, Abida; Balter, Andrew; Laruelle, Marc Department of Psychiatry, New York State Psychiatric Institute, Columbia CS University College of Physicians and Surgeons, New York, NY, 10032, USA Nuclear Medicine and Biology (2004), 31(7), 939-948 SO CODEN: NMBIEO; ISSN: 0969-8051 PΒ Elsevier Inc. Journal DT English LA The development of imaging methods to measure changes in NMDA ion channel AB activation would provide a powerful means to probe the mechanisms of drugs and device-based treatments (e.g., ECT) thought to alter glutamate neurotransmission. To provide a potential NMDA/PCP receptor PET tracer, we synthesized the radioligand [11C]GMOM ( $ki = 5.2 \pm 0.3 \text{ nM}$ ; log P =2.34) and evaluated this ligand in vivo in awake male rats and isoflurane anesthetized baboons. In rats, the regional brain uptake of [11C]GMOM ranged from  $0.75\pm0.13\%$  ID/g in the medulla and pons to  $1.15\pm0.17\%$ ID/g in the occipital cortex. MK801 (1 mg/kg i.v.) significantly reduced (24-28%) [11C]GMOM uptake in all regions. D-Serine (10 mg/kg i.v.) increased [11C]GMOM %ID/g values in all regions (10-24%) reaching significance in the frontal cortex and cerebellum only. The NR2B ligand RO 25-6981 (10 mg/kg i.v.) reduced [11C]GMOM uptake significantly (24-38%) in all regions except for the cerebellum and striatum. Blood activity was 0.11±0.03 %ID/g in the controls group and did not vary significantly across groups. PET imaging in isoflurane-anesthetized baboons with high specific activity [11C]GMOM provided fairly uniform regional brain distribution volume (VT) values (12.8-17.1 mL g-1). MK801 (0.5 mg/kg, i.v.,

n=1, and 1.0 mg/kg, i.v., n=1) did not significantly alter regional VT values, indicating a lack of saturable binding. However, the potential

confounding effects associated with ketamine induction of anesthesia along with isoflurane maintenance must be considered because both agents are known to reduce NMDA ion channel activation. Future and carefully designed studies, presumably utilizing an optimized NMDA/PCP site tracer, will be carried out to further explore these hypotheses. We conclude that, even though [11C]GMOM is not an optimized PCP site radiotracer, its binding is altered in vivo in awake rats as expected by modulation of NMDA ion channel activity by MK801, D-serine or RO 25-6981. The development of higher affinity NMDA/PCP site radioligands is in progress.

RE.CNT 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L4 ANSWER 5 OF 24 CAPLUS COPYRIGHT 2007 ACS on STN
- AN 2004:645804 CAPLUS
- DN 141:174086
- TI Pharmaceutically active compounds containing a guanidine moiety for treatment of neurol. injury and neurodegenerative disorders
- PA Cambridge Neuroscience, Inc., USA
- SO U.S., 15 pp., Cont.-in-part of U.S. Provisional Ser. No. 63,469. CODEN: USXXAM
- DT Patent
- LA English
- FAN.CNT 2

| PATENT NO.          | KIND | DATE     | APPLICATION NO. | DATE     |
|---------------------|------|----------|-----------------|----------|
|                     |      |          |                 |          |
| PI US 6774263       | B1   | 20040810 | US 1998-169028  | 19981009 |
| PRAI US 1997-63469P | P    | 19971010 |                 |          |
| GT                  |      |          |                 |          |

Ι

- AB Compds., such as I (X = S, O) and II, and pharmaceutically acceptable salts thereof, containing a guanidine moiety were prepared for therapeutic use in pharmaceutical compns. for the treatment or prophylaxis of neurol. injury and neurodegenerative disorders. The prepared compds. were assayed for neurol. activity using a rat rotarod motor coordination test.
- RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT
- L4 ANSWER 6 OF 24 CAPLUS COPYRIGHT 2007 ACS on STN
- AN 2004:353140 CAPLUS
- DN 140:380634
- TI Compositions of cyclooxygenase-2 selective inhibitors and NMDA receptor antagonists for the treatment or prevention of neuropathic pain

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IN
     Cheung, Raymond Y.
PA
     Pharmacia Corporation, USA
     U.S. Pat. Appl. Publ., 51 pp.
SO
     CODEN: USXXCO
DT
     Patent
     English
LA
FAN.CNT 1
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     WO 2004039371
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                                 20040513
                                              WO 2003-US33089
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     WO 2004039371
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             TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
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PRAI US 2002-282660
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     WO 2003-US33089
                                 20031017
OS.
     MARPAT 140:380634
     The present invention provides compns. and methods to treat or prevent
AB
     neuropathic pain in a subject using a combination of a COX-2 selective
     inhibitor and a NMDA receptor antagonist.
     ANSWER 7 OF 24 CAPLUS COPYRIGHT 2007 ACS on STN
L4
AN
     2004:60459 CAPLUS
DN
     140:111134
     Preparation of phenylguanidine isotopomers for therapeutic use as in vivo
TI
     diagnosis or imaging of NMDA-mediated disease
     Brady, Frank; Luthra, Sajinder Kaur
IN
PA
     Hammersmith Imanet Ltd., UK
SO
     PCT Int. Appl., 23 pp.
     CODEN: PIXXD2
DT
     Patent
LA
     English
FAN.CNT 1
                                              APPLICATION NO.
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                                             WO 2003-GB3078
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     US 2005260125
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PRAI GB 2002-16621
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     WO 2003-GB3078
OS
     MARPAT 140:111134
GI
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This invention relates to the preparation of guanidine isotopomers, such as I AB [R1 = 11CH2R5, (CH2)n18F; R2 = H, C1-4-alkyl; R3 = halogen; R4 = halogen, C1-4-alkyl, C1-4-alkylthio; R5 = H, C1-4-alkyl], for use in diagnosis and tomog. imaging of NMDA-mediated nervous system disease in vivo. Thus, I (R1 = 11CH3, R2 = Me, R2 = 2-Cl, R4 = 3-MeS) was prepared N-alkylation of the corresponding guanidine I (R1 = H, R2 = Me, R2 = 2-Cl, R4 = 3-MeS) with [11C] iodomethane using NaH in MeCN. The prepared guanidines were assayed in rats for biodistribution in body tissue, for radioactivity in blood and plasma, and for NMDA receptor affinity.

THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

I

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ANSWER 8 OF 24 CAPLUS COPYRIGHT 2007 ACS on STN
L4
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2003:242167 CAPLUS. AN

DN

Methods using cholinesterase inhibitors for treating and preventing migraine

IN Pratt, Raymond

Eisai Co., Ltd., Japan

PCT Int. Appl., 30 pp.

CODEN: PIXXD2

DT Patent

English LA

| FAN.       | CNT           | 1    |      |           |             |                 |                 |      |      |     |      |          |     |     |     |     |     |     |
|------------|---------------|------|------|-----------|-------------|-----------------|-----------------|------|------|-----|------|----------|-----|-----|-----|-----|-----|-----|
| PATENT NO. |               |      |      | KIND DATE |             | APPLICATION NO. |                 |      |      |     | DATE |          |     |     |     |     |     |     |
|            |               |      |      |           |             |                 |                 |      |      |     |      |          |     |     |     |     |     |     |
| ΡI         | WO 2003024456 |      |      |           | A1 20030327 |                 | WO 2002-US29734 |      |      |     |      | 20020920 |     |     |     |     |     |     |
|            |               | W:   | ΑE,  | AG,       | AL,         | AM,             | ΑT,             | AU,  | ΑZ,  | BA, | BB,  | BG,      | BR, | BY, | ΒZ, | CA, | CH, | CN, |
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|            |               |      | UA,  | ŬĠ,       | US,         | UΖ,             | VC,             | VN,  | YU,  | ZA, | ZM,  | zw       |     |     |     |     |     |     |
|            |               | RW:  | GH,  | GM,       | KE,         | LS,             | MW,             | MZ,  | SD,  | SL, | SZ,  | TZ,      | UG, | ZM, | ZW, | AM, | ΑZ, | BY, |
| •          |               |      | KG,  | KZ,       | MD,         | RU,             | ТJ,             | TM,  | AT,  | BE, | BG,  | CH,      | CY, | CZ, | DE, | DK, | EE, | ES, |
|            |               |      | FI,  | FR,       | GB,         | GR,             | ΙE,             | IT,  | LU,  | MC, | NL,  | ΡΤ,      | SE, | SK, | TR, | BF, | ВJ, | CF, |
|            |               |      | CG,  | CI,       | CM,         | GA,             | GN,             | GQ,  | GW,  | ML, | MR,  | NE,      | SN, | TD, | TG  |     | •   |     |
| PRAI       | US            | 2001 | -323 | 310P      |             | P               |                 | 2001 | 0920 |     |      |          |     |     |     |     |     |     |
|            | US            | 2002 | -349 | 244P      |             | P               |                 | 2002 | 0118 |     |      |          |     |     |     |     |     |     |

OS MARPAT 138:248536

The invention provides safe and effective methods for treating and preventing migraine by administering an effective amount of one or more cholinesterase inhibitors and, optionally, one or more migraine drugs. The invention also provides compns., combinations, and kits comprising one or more cholinesterase inhibitors and one or more migraine drugs. embodiment, the cholinesterase inhibitor is donepezil or ARICEPT.

THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD RE.CNT 2 ALL CITATIONS AVAILABLE IN THE RE FORMAT

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L4
    ANSWER 9 OF 24 CAPLUS COPYRIGHT 2007 ACS on STN
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AN 2002:903496 CAPLUS

DN 138:299872

Synthesis of [11C] N-(2-chloro-5-thiomethylphenyl)-N'-(3-methoxyphenyl)-N'-TI

- methylguanidine ([11C]GMOM): a candidate PET tracer for imaging the PCP site of the NMDA ion channel
- AU Waterhouse, Rikki N.; Dumont, Filip; Sultana, Abida; Simpson, Norman; Laruelle, Marc
- CS Department of Psychiatry, Columbia University College of Physicians and Surgeons and New York State Psychiatric Institute, New York, NY, 10032, USA
- SO <u>Journal of Labelled Compounds & Radiopharmaceuticals (2002), 45(11), 955-964</u>
  CODEN: JLCRD4; ISSN: 0362-4803
- PB John Wiley & Sons Ltd.
- DT Journal
- LA English
- The N-methyl-D-aspartate (NMDA) ion channel plays an important role in a number of neurodegenerative disorders including stroke, Parkinson's disease, Huntington's Chorea, Alzheimer's disease, schizophrenia and epilepsy. To provide effective radioligands for imaging the PCP binding site of the NMDA ion channel, we synthesized and characterized in vitro the candidate PCP site ligand N-(2-chloro-5-thiomethylphenyl)-N'-(3-methoxyphenyl)-N'-methylguanidine (GMOM: Ki =  $5.2 \pm 0.3$  nM, log P = 2.34). The corresponding PET radiotracer [11C]GMOM was synthesized with a radiochem. yield of  $8.4 \pm 3.2\%$  EOS and with a specific activity of  $1.23 \pm 0.25$  Ci/ $\mu$ mol EOS (n = 5). The average time required for synthesis, purification

and formulation was 52  $\pm$  5 min. The final product was prepared in a sterile saline solution suitable for in vivo use.

- RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT
- L4 ANSWER 10 OF 24 CAPLUS COPYRIGHT 2007 ACS on STN
- AN 2002:407966 CAPLUS
- DN 138:49371
- TI Synthesis and in vitro evaluation of N,N'-diphenyl and N-naphthyl-N'-phenylguanidines as N-methyl-d-aspartate receptor ion-channel ligands
- AU Dumont, Filip; Sultana, Abida; Waterhouse, Rikki N.
- CS Division of Functional Brain Mapping, Columbia University, New York, NY, 10032, USA
- SO Bioorganic & Medicinal Chemistry Letters (2002), 12(12), 1583-1586 CODEN: BMCLE8; ISSN: 0960-894X
- PB Elsevier Science Ltd.
- DT Journal
- LA English
- OS CASREACT 138:49371
- AB A series of N,N'-diphenyl and N-naphthyl-N'-Ph guanidine derivs. was synthesized as potential N-methyl-D-aspartate (NMDA) receptor positron emission tomog. (PET) ligands. The affinity of the different compds. was determined using in vitro receptor binding assays, and their log P values were estimated using HPLC anal. The effect of N'-3 and N'-3,5 substitution on affinity and lipophilicity was examined The Ki values ranged from 1.87 to 839 nM, while log P values between 1.22 and 2.88 were observed
- RE.CNT 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT
- L4 ANSWER 11 OF 24 CAPLUS COPYRIGHT 2007 ACS on STN
- AN 2002:370623 CAPLUS
- DN 137:232425
- TI Synthesis of N-(2-chloro-5-methylthiophenyl)-N'-(3-methyl-thiophenyl)-N'[3H3]methylguanidine, {[3H3]CNS-5161}
- AU Gibbs, Andrew R.; Morimoto, Hiromi; VanBrocklin, Henry F.; Williams, Philip G.; Biegon, Anat
- CS Department of Functional Imaging, Lawrence Berkeley National Laboratory, Berkeley, CA, 94720, USA
- SO Journal of Labelled Compounds & Radiopharmaceuticals (2002), 45(5), 395-400

CODEN: JLCRD4; ISSN: 0362-4803

- PB John Wiley & Sons Ltd.
- DT Journal
- LA English
- OS CASREACT 137:232425
- The preparation of the title compound, [3H3]CNS-5161, was accomplished in three steps starting with the production of [3H3]iodomethane (CT3I). The intermediate N-[3H3]methyl-3-(thiomethylphenyl)cyanamide was prepared in 77% yield by the addition of CT3I to 3-(thiomethylphenyl)cyanamide, previously treated with sodium hydride. Reaction of this tritiated intermediate with 2-chloro-5-thiomethylaniline hydrochloride formed the guanidine compound [3H3]CNS-5161. Purification by HPLC gave the desired labeled product in an overall yield of 9% with >96% radiochem. purity and a final specific activity of 66 Ci mmol-1.
- RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT
- L4 ANSWER 12 OF 24 CAPLUS COPYRIGHT 2007 ACS on STN
- AN 2002:274772 CAPLUS
- DN 136:363750
- TI Early clinical experience with the novel NMDA receptor antagonist CNS 5161
- AU Walters, M. R.; Bradford, A. P. J.; Fischer, J.; Lees, K. R.
- CS Western Infirmary, University Department of Medicine and Therapeutics, Glasgow, Gl1 6NT, UK
- SO British Journal of Clinical Pharmacology (2002), 53(3), 305-311 CODEN: BCPHBM; ISSN: 0306-5251
- PB Blackwell Publishing Ltd.
- DT Journal
- LA English
- Aim was to investigate the safety, tolerability and pharmacokinetics of AB the novel NMDA antagonist CNS 5161 in humans. Excessive activation of qlutamate receptors, especially of the N-methyl-D-aspartate (NMDA) subtype has been associated with neuropathic pain, and brain damage caused by focal ischemia in mature brain or hypoxia-ischemia (HI) in neonates. CNS 5161 is a novel NMDA ion-channel antagonist that interacts with the NMDA receptor/ion channel site to produce a noncompetitive blockade of the actions of glutamate. Pre-clin. studies have demonstrated neuroprotective effects of CNS 5161 in the adult rat model of focal cerebral ischemia, as well as anticonvulsant and analgesic effects. This study reports the first administration of CNS 5161 to man. Its objectives were to investigate the hemodynamic effects of the compound, to assess its safety and tolerability in healthy male volunteers, and to provide some preliminary human pharmacokinetic data. We performed a randomized, double-blind placebo controlled phase 1 dose escalation study of CNS 5161. Volunteers were randomized to receive CNS 5161 or placebo in a ratio of 3:1. Twenty-four of 32 healthy volunteers received i.v. infusion of CNS 5161 over 15 min, followed by serial measurements of plasma drug concentration and hemodynamic observations over 24 h. A dose escalation design was adopted and the volunteers were stratified into eight dosage groups, ranging from 30 µg to 2000 µg. The drug was well tolerated by recipients. Side-effects were dose-related, self limiting and comprised minor subjective sensory symptoms. A dose dependent rise in systolic, mean arterial and diastolic blood pressure was seen in subsequent dosage groups, reaching 23/19 mmHg. Maximal effects were seen between 60 and 120 min after commencement of infusion. All subjects returned to baseline hemodynamic values within 24 h. Putative neuroprotective concns. of CNS 5161 were achieved transiently, although these levels were not sustained. The pharmacokinetic data were best described by a two compartment model. The mean half-life was 2.95 h (s.d. 0.75). Mean clearance was 106 l h-l (s.d. 17.8) mean volume of distribution was 296 1 (s.d. 69). These parameters were not significantly affected by body weight This study suggests that CNS 5161 is well tolerated in healthy volunteers within the dose range studied. In addition, information concerning the pharmacokinetics of the compound has been acquired. Studies to investigate the efficacy of the compound in man may now be justified.

## RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD

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ALL CITATIONS AVAILABLE IN THE RE FORMAT
     ANSWER 13 OF 24 CAPLUS COPYRIGHT 2007 ACS on STN
L4
AN
     2001:208093 CAPLUS
DN
     134:242673
     Transdermal administration of n-(2,5-disubstituted phenyl)-n'-(3-
ΤI
     substituted phenyl)-n'-methyl guanidines
     Van Osdol, William W.; Gale, Robert M.; Brandwein, David H.; Padmanabhan,
IN
     Rama; Sunram, Joan
PA
     Alza Corporation, USA
SO
     PCT Int. Appl., 39 pp.
     CODEN: PIXXD2
DT
     Patent
    English
LΑ
FAN.CNT 1
     PATENT NO.
                        KIND
                              DATE
                                          APPLICATION NO.
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                             20010322 WO 2000-US24682
     WO 2001019352
                                                                20000908
PΙ
                        A1
        W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
            CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,
            HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,
            LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,
            SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU,
            ZA, ZW
        RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
            DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,
            CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
                                        CA 2000-2384986
                                                                 20000908
     CA 2384986
                         A1
                               20010322
                               20020626
                                          EP 2000-964953
                                                                 20000908
    EP 1216036
                         A1
                               20051116
                        B1
    EP 1216036
        R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
            IE, SI, LT, LV, FI, RO, MK, CY, AL
                                          AT 2000-964953
                                                                 20000908
    AT 309791
                         T
                               20051215
    ES 2249296
                         T3
                                          ES 2000-964953
                                                                 20000908
                               20060401
                                          US 2003-412104
                                                                 20030411
    US 2003198662
                        Al
                              20031023
                                          US 2004-895788
                                                                 20040720
    US 2004258742
                       A1
                              20041223
                      P
PRAI US 1999-153996P
                              19990915
                        В1
    US 2000-658649
                              20000908
                       W
    WO 2000-US24682
                              20000908
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A composition for transdermal administration comprises (1) 1-30% a AB N-(2,5-disubstituted phenyl)-N'-(3-substituted phenyl)-N'-Me guanidine, (2) 0-50% a permeation enhancer, and (3) 30-90% a polymeric carrier. Drug delivery devices and methods for the transdermal administration of a guanidine for the prevention of neuropathic pain, neuropsychol. deficits resulting from cardiac surgery (CABG), and other neurol. disorders are also described. For example, transdermal delivery systems containing 6% guanidine derivative CNS 5161 or its HCl salt CNS 5161A were prepared without

20030411

orwith a permeation enhancer (3% glyceryl monolaurate or 12% lauryl pyroglutamate), and NS 87-2287 acrylate adhesive. Systems with formulations containing the drug as a base displayed higher flux than those with the HCl salt. In addition, systems with formulations containing lauryl pyroglutamate consistently exhibited higher drug flux than formulations with glyceryl monolaurate for formulations with either the drug base or salt.

. THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD RE.CNT 5 ALL CITATIONS AVAILABLE IN THE RE FORMAT

ANSWER 14 OF 24 CAPLUS COPYRIGHT 2007 ACS on STN L4

B1

AN 2001:177402 CAPLUS

US 2003-412104

DN 135:443

TI Identification and characterization of a potential ischemia-selective N-methyl-d-aspartate (NMDA) receptor ion-channel blocker, CNS 5788

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AU Padmanabhan, S.; Perlman, M. E.; Zhang, L.; Moore, D.; Zhou, D.; Fischer, J. B.; Durant, G. J.; McBurney, R. N.
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CS Cambridge NeuroScience, Inc., Norwood, MA, 02602, USA

SO Bioorganic & Medicinal Chemistry Letters (2001), 11(4), 501-504 CODEN: BMCLE8; ISSN: 0960-894X

PB Elsevier Science Ltd.

DT Journal

LA English

AB The identification and characterization of a potentially ischemia-selective and orally-active sulfoxide based NMDA ion-channel blocker showing good neuroprotective activity, (R)-(+)-N-(2-chloro-5-methylthiophenyl)-N'-(3-methylsulfinylphenyl)-N'-methylguanidine (CNS 5788), is described. Synthesis and in vitro and in vivo studies led to the characterization of a potential ischemia-selective and neuroprotective sulfoxide based ion-channel blocker 10. The R enantiomer has been identified to be orally active and neuroprotective with min. side effects.

RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 15 OF 24 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2000:845048 CAPLUS

DN 134:100623

TI Asymmetric synthesis of a neuroprotective and orally active N-methyl-D-aspartate receptor ion-channel blocker.

AU Padmanabhan, Seetharamaiyer; Lavin, Ruth C.; Durant, Graham J.

CS Cambridge NeuroScience, Inc., Cambridge, MA, 02139, USA

SO Tetrahedron: Asymmetry (2000), 11(17), 3455-3457 CODEN: TASYE3; ISSN: 0957-4166

PB Elsevier Science Ltd.

DT Journal

LA English

OS CASREACT 134:100623

GΙ

AB Asym. synthesis of N-(2-chloro-5-methylthiophenyl)-N'-(3-methylsulfinylphenyl)-N'-methyl-guanidine (I) was achieved in high enantiomeric excess by condensation of cyanamide II and benzeneamine III. The key step involved asym. oxidation of N-methyl-3-methylthioaniline using (1R)-8,8-Dichloro-10-camphorsulfonyloxaziridine (Davis reagent).

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

I

L4 ANSWER 16 OF 24 CAPLUS COPYRIGHT 2007 ACS on STN AN 2000:545075 CAPLUS

- DN 134:402
- TI Neuroprotective, anesthetic, and cardiovascular effects of the NMDA antagonist, CNS 5161A, in isoflurane-anesthetized lambs
- AU Bokesch, Paula M.; Kapural, Miranda; Drummond-Webb, Jonathan; Baird, Kevin; Kapural, Leo; Mee, Roger B. B.; Trapp, Bruce; Starr, Norman J.
- CS Department of Cardiothoracic Anesthesia, Center for Congenital Heart Disease and Surgery, Cleveland, OH, USA
- SO Anesthesiology (2000), 93(1), 202-208 CODEN: ANESAV; ISSN: 0003-3022
- PB Lippincott Williams & Wilkins
- DT Journal
- LA English

determined

AB N-methyl-D-aspartate (NMDA) receptor antagonists are neuroprotective in animal models of cerebral ischemia, but adverse cardiovascular and neurobehavioral effects have precluded their clin. use. The authors present the neuroprotective, anesthetic, and cardiovascular effects of a novel NMDA antagonist, CNS 5161A. Lambs, 4.0-6.5 kg, were anesthetized with isoflurane, intubated, and ventilated and had thermodilution catheters placed in the pulmonary artery and 20-g catheters placed in the femoral artery. The min. alveolar concentration (MAC) of isoflurane was

using the "bracketing technique.". CNS 5161A was given as a bolus and then as an infusion at three doses. Cardiovascular measurements were determined every 15 min. Other lambs (n = 25) were subjected to cardiopulmonary bypass (CPB) with hypothermic circulatory arrest (HCA) for 120 min. Eighteen received CNS 5161A, and seven received saline vehicle. One hour after CPB, brains were perfusion-fixed and removed for in situ hybridization and immunohistochem. anal. in half of the animals. The other half survived 48 h before their brains were examined for neuronal degeneration. Isoflurane at MAC significantly decreased blood pressure, heart rate, cardiac output, and systemic vascular resistance by 30-48% (n = 16; P < 0.05). CNS 5161A (n = 12) had no significant cardiovascular effects. All concns. of CNS 5161A caused a significant reduction (21-29%) of the MAC of isoflurane (n = 12; P < 0.05). CNS 5161A, at serum concns. greater than 25 ng/mL, completely inhibited c-fos mRNA and c-FOS protein expression in hippocampal neurons after 120 min of HCA, attenuated neuronal degeneration, and improved functional outcome by 47% (P < 0.05). CNS 5161A at neuroprotective concns. before CPB-HCA significantly reduces the MAC of isoflurane without cardiovascular effects.

RE.CNT 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L4 ANSWER 17 OF 24 CAPLUS COPYRIGHT 2007 ACS on STN
- AN 1999:321805 CAPLUS
- DN 131:80
- TI CNS-5161 Cambridge NeuroScience Inc
- AU Linders, Joannes T. M.
- CS Scientific Development Group NV Organon, Oss, 5340 BH, Neth.
- SO Current Opinion in Central & Peripheral Nervous System Investigational Drugs (1999), 1(1), 167-170 CODEN: COCDFA; ISSN: 1464-844X
- PB Current Drugs Ltd.
- DT Journal; General Review
- LA English
- AB A review with 25 refs. Cambridge NeuroScience is developing CNS-5161, an N-methyl-D-aspartate (NMDA) ion channel blocker, as a potential treatment for neuropathic pain and migraine. It is in phase I development for migraine and neuropathy. Boehringer Ingelheim has the right to negotiate a development and marketing agreement for CNS-5161 for the treatment of neurol. deficits from cardiac surgery [203771], but is not developing the product [231830].
- RE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
DN
     130:281875
     Preparation of N-[(methylsulfinyl)phenyl]guanidines as neuroprotectants
TI
     Durant, Graham J.; Perlman, Michael; Fischer, James B.; Padmanabhan,
IN
     Seetharamaiyer
     Cambridge Neuroscience, Inc., USA
PA
SO
     PCT Int. Appl., 37 pp.
     CODEN: PIXXD2
DT
     Patent
     English
LA
FAN.CNT 2
                                                                      DATE
     PATENT NO.
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                                              APPLICATION NO.
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                                 19990422
     WO 9918962
                                              WO 1998-US21395
                                                                      19981009
PI
                          A1
         W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE,
             DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG,
             KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX,
             NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT,
             \mathtt{UA},\ \mathtt{UG},\ \mathtt{UZ},\ \mathtt{VN},\ \mathtt{YU},\ \mathtt{ZW},\ \mathtt{AM},\ \mathtt{AZ},\ \mathtt{BY},\ \mathtt{KG},\ \mathtt{KZ},\ \mathtt{MD},\ \mathtt{RU},\ \mathtt{TJ},\ \mathtt{TM}
         RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES,
             FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI,
              CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
     CA 2306276
                           A1
                                 19990422
                                              CA 1998-2306276
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                                 19990503
                                              AU 1999-10767
     AU 9910767
                           Α
                                                                      19981009
                                              EP 1998-953372
                                                                      19981009
                                 20001011
     EP 1041986
                           A1
             AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO
                           Т
                                              JP 2000-515597
                                                                      19981009
     JP 2001519393
                                 20011023
PRAI US 1997-63469P
                           P
                                 19971010
                           W
     WO 1998-US21395
                                 19981009
     Title compds., e.g., MeSZNHC(:NH)NMeC6H4(SOMe)-3.HCl(I)(Z =
AB
     2-chloro-1,5-phenylene), were prepared Thus, 3-(MeS)C6H4NHMe was oxidized
     and the product hydrochloride condensed with 2-chloro-5-
     methylthiophenylcyanamide to give I.
              THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE.CNT 1
              ALL CITATIONS AVAILABLE IN THE RE FORMAT
     ANSWER 19 OF 24 CAPLUS COPYRIGHT 2007 ACS on STN
L4
     1999:64675 CAPLUS
AN
DN
     130:148681
     Combination antiinfective drug therapies comprising aminoglycoside
TI
     antibiotics and N, N'-disubstituted guanidines
     Gwynne, David I.; Durant, Graham J.
IN
     Cambridge Neuroscience, Inc., USA
PA
     PCT Int. Appl., 130 pp.
SO
     CODEN: PIXXD2
DT
     Patent
     English
LA
FAN.CNT 1
     PATENT NO.
                          KIND
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                                              WO 1998-US13640
                                                                      19980706
     WO 9902145
                          A1
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ΡI
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             KG; KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW,
             MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR,
             TT, UA, UG, US, UZ, VN, YU, ZW
         RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES,
             FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI,
             CM, GA, GN, ML, MR, NE, SN, TD, TG
                                                                      19980706
                                 19990208
                                              AU 1998-82784
     AU 9882784
                           Α
                           Р
                                 19970707
PRAI US 1997-51860P
     WO 1998-US13640
                           W
                                 19980706
     MARPAT 130:148681
OS
     Methods and compns. are provided for treatment of infections, including
AB
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1999:265890 CAPLUS

AN

Gram-neg. and Gram-pos. bacterial infections, comprising administering an aminoglycoside antibiotic in combination with a substituted guanidine or other compound as disclosed. Preferred methods and compns. of the invention will be effective against infections previously treated with

aminoglycoside antibiotics, but with decreased occurrence of ototoxicity.

THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD RE.CNT 2 ALL CITATIONS AVAILABLE IN THE RE FORMAT

- ANSWER 20 OF 24 CAPLUS COPYRIGHT 2007 ACS on STN L4
- 1998:119668 CAPLUS AN
- DN128:316907
- Synthesis and Pharmacological Evaluation of N-(2,5-Disubstituted TIphenyl)-N'-(3-substituted phenyl)-N'-methylguanidines As N-Methyl-D-aspartate Receptor Ion-Channel Blockers. [Erratum to document cited in CA128:212660]
- Hu, Lain-Yen; Guo, Junqing; Magar, Sharad S.; Fischer, James B.; AU Burke-Howie, Kathleen J.; Durant, Graham J.
- Cambridge NeuroSci., Inc., Cambridge, MA, 02139, USA CS
- SO Journal of Medicinal Chemistry (1998), 41(6), 1006 CODEN: JMCMAR; ISSN: 0022-2623
- PB American Chemical Society
- DTJournal
- LA English
- ABThe generic structure for Table 4 has been corrected
- L4ANSWER 21 OF 24 CAPLUS COPYRIGHT 2007 ACS on STN
- AN 1998:94768 CAPLUS
- DN 128:176172
- Methods of treatment of eye trauma and disorders with substituted TI quanidines and other compounds
- IN McBurney, Robert N.
- Cambridge Neuroscience, Inc., USA; McBurney, Robert N. PA
- PCT Int. Appl., 92 pp. SO CODEN: PIXXD2
- DTPatent
- LA English

| FAN        | I.CNT 1       |         |            |             |      |                 |                                   |       |      |     |      |          |       |     |
|------------|---------------|---------|------------|-------------|------|-----------------|-----------------------------------|-------|------|-----|------|----------|-------|-----|
|            |               |         |            |             |      | APPLICATION NO. |                                   |       |      |     | DATE |          |       |     |
|            |               |         |            |             |      |                 |                                   |       |      |     |      |          |       |     |
| ΡI         |               |         |            |             |      |                 |                                   |       |      |     |      |          |       |     |
|            |               | AM, AT, |            |             |      |                 |                                   |       |      |     |      |          |       |     |
|            | •             | EE, ES, |            |             | -    | •               |                                   |       | -    | -   |      |          |       |     |
|            |               | LK, LR, |            |             |      |                 |                                   |       |      |     |      |          |       |     |
|            |               | RO, RU, |            | SE, SG,     | SI,  | SK,             | SL,                               | TJ,   | TM,  | TR, | TT,  | UA,      | UG,   | US, |
|            |               | VN, YU, |            |             |      |                 |                                   |       |      |     |      |          |       |     |
|            |               | KE, LS, |            |             |      |                 |                                   |       |      |     |      |          |       |     |
|            |               | GR, IE, |            |             |      | PT,             | SE,                               | BF,   | ВJ,  | CF, | CG,  | CI,      | CM,   | GA, |
|            |               | ML, MR, |            |             |      |                 |                                   |       |      |     |      |          |       |     |
| US 6242198 |               |         | B1         | B1 20010605 |      |                 | US 1996-686494<br>CA 1997-2261765 |       |      |     |      | 19960725 |       |     |
|            | CA 2261765    |         | A1         | 1998        | 0205 | (               | CA 1                              | 997-  | 2261 | 765 |      | 1        |       |     |
|            | AU 9739654    |         |            |             |      |                 | AU 1                              | 997-: | 3965 | 4   |      | 1        | 9970  | 725 |
|            | AU 742404     |         |            |             |      |                 |                                   |       |      |     |      | •        |       |     |
|            | EP 918460     |         |            |             |      |                 |                                   |       |      |     |      |          |       |     |
|            | R: AT,        | BE, CH, | DE,        | DK, ES,     | FR,  | GB,             | GR,                               | IT,   | LI,  | LU, | NL,  | SE,      | MC,   | PT, |
|            |               | FI      |            |             |      |                 |                                   |       |      |     |      |          |       |     |
|            | JP 20005158   | 195     | Ţ          | 2000        | 1128 |                 |                                   |       |      |     |      |          | 9970' |     |
|            | KR 20000295   |         |            |             | 0525 |                 |                                   |       |      |     |      |          | 9990. |     |
|            | US 6358696    |         |            | 2002        | 0319 |                 |                                   |       |      |     |      |          | 0000  |     |
|            | US 20030278   |         |            |             | 0206 |                 | US 2                              | 002-0 | 5010 | 1   |      | 2        | 0020  | 129 |
|            | US 6673557    |         |            |             |      |                 |                                   |       |      |     |      |          |       |     |
| PRA        | I US 1996-686 |         |            |             |      |                 |                                   |       |      |     |      |          |       |     |
|            | WO 1997-US1   |         |            |             |      |                 |                                   |       |      |     |      |          |       |     |
|            | US 2000-635   |         | <b>A</b> 3 | 2000        | 0809 |                 |                                   |       |      |     |      |          |       |     |
| os         | MARPAT 128:   | 176172  |            |             |      |                 |                                   |       |      |     |      |          |       |     |

Methods using substituted guanidines and other compds. are provided for AB

treatment of eye disorders and injury, including methods for treatment of reduced flow of blood or other nutrients to retinal tissue and/or optic nerve, methods for treatment of retinal ischemia and trauma, and methods for treatment for optic nerve injury/damage.

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L4 ANSWER 22 OF 24 CAPLUS COPYRIGHT 2007 ACS on STN
- AN 1998:35396 CAPLUS
- DN 128:212660
- TI Synthesis and pharmacological evaluation of N-(2,5-disubstituted phenyl)-N'-(3-substituted phenyl)-N'-methylguanidines as N-methyl-D-aspartate receptor ion-channel blockers
- AU Hu, Lain-Yen; Guyo, Junqing; Magar, Sharad S.; Fischer, James B.; Burke-Howie, Kathleen J.; Durant, Graham J.
- CS Cambridge NeuroSci., Inc., Cambridge, MA, 02139, USA
- SO Journal of Medicinal Chemistry (1997), 40(26), 4281-4289 CODEN: JMCMAR; ISSN: 0022-2623
- PB American Chemical Society
- DT Journal
- LA English
- In the mammalian central nervous system, the N-methyl-D-aspartate (NMDA) AΒ subclass of glutamate receptors may play an important role in brain diseases such as stroke, brain or spinal cord trauma, epilepsy, and certain neurodegenerative diseases. Compds. which specifically antagonize the actions of the neurotransmitter glutamate at the NMDA receptor ion-channel site offer a novel approach to treating these disorders. Cerestat (aptiganel, CNS 1102) is currently undergoing clin. trial for the treatment of traumatic brain injury and stroke. Previously, the authors reported that analogs of N-1-naphthyl-N'-(3-ethylphenyl)-N'methylquanidine bound to the NMDA receptor ion-channel site with high potency and selectivity. Recently, mols. active at both  $\sigma$  receptors and NMDA receptor sites were investigated. A series of substituted diphenylquanidines which are structurally related to N-1-naphthyl-N'-(3ethylphenyl)-N'-methylguanidine was prepared Compds. containing appropriate substitution pattern in one of the Ph rings of diphenylguanidines displayed high affinity. N-(2,5-dibromophenyl)-N'-(3-ethylphenyl)-N'methylquanidine (I) had potency at both σ receptors and NMDA receptor sites; I also showed high efficacy in vivo in a neonatal rat excitotoxicity model. Further studies indicated that substituent effects were important in this compound series, and 2,5-disubstituted-Ph was the preferred substitution pattern for high-affinity binding at NMDA receptor sites. N-(2-Bromo-5(methylthio)phenyl)-N'-(3-ethylphenyl)-N'methylquanidine was highly active at NMDA receptor sites. The binding affinity of some quanidines was further enhanced with the appropriate substitution. Two compds. bound to NMDA receptor sites with high potency and selectivity (Ki vs [3H] MK-801: 1.87 and 1.65 nM, resp.,); these compds. are active in vivo in various animal models of neuroprotection. The structure-activity relationships for these compds. at the NMDA receptor ion-channel site are discussed.
- RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
L4 ANSWER 23 OF 24 CAPLUS COPYRIGHT 2007 ACS on STN
```

- AN 1995:758935 CAPLUS
- DN 123:132889
- TI Substituted guanidines as NMDA antagonists in treatment of neurological conditions
- IN Durant, Graham J.; Hu, Lain-Yen; Magar, Sharad
- PA Cambridge Neuroscience, Inc., USA
- SO PCT Int. Appl., 38 pp. CODEN: PIXXD2
- DT Patent
- LA English
- FAN.CNT 2

```
DATE
     PATENT NO.
                        KIND
                                          APPLICATION NO.
                        A1 19950601 WO 1994-US13245 19941122
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PΤ
     WO 9514461
        W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI,
            GB, GE, HU, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG,
            MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SI, SK, TJ, TT, UA,
        RW: KE, MW, SD, SZ, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU,
            MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN,
                                        CA 1994-2177081
                         A1
                               19950601
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                               19950613
                                          AU 1995-12900
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     AU 9512900
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    AU 705487
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                            19961030
                                        EP 1995-904077
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    JP 09505591 T 19970603 JP 1995-515132 19941122
                                                                19941123
ZA 9409294 A
US 5922772 A
US 5955507 A
US 6013675 A
PRAI US 1993-156773 A
WO 1994-US13245 W
                        Α
                               19951011 ZA 1994-9294
     ZA 9409294
                                                                19950602
                               19990713
                                          US 1995-458809
                                          US 1995-459975
                               19990921
                                                                19950602
                                         US 1995-459974
                               20000111
                                                                19950602
                               19931123
                               19941122
     MARPAT 123:132889
os
     Substituted guanidines RR1NC(:NH)NR2R3 [I; R, R1, R2 = H, (substituted)
AB
     alkyl, alkenyl, alkynyl, alkoxy, thioalkyl, aminoalkyl, aryl, aralkyl; R3
     = (substituted) aryl, thioalkyl, alkylsulfinyl, alkylsulfonyl, haloalkoxyl
     and pharmaceutically acceptable salts thereof, are effective for treating
     disorders involving excessive excitation of nerve cells by NMDA receptor
     agonists. PCP radioligand-binding assays and σ-receptor binding
     assays were performed with 9 compds., e.g. I (R = 1-naphthyl, R1 = H, R2 =
     Me, R3 = 3-SMe-C6H4).
     ANSWER 24 OF 24 CAPLUS COPYRIGHT 2007 ACS on STN
L4
     1995:339509 CAPLUS
\mathbf{AN}
DN
     122:96529
     Substituted guanidines for treatment of central nervous system disease
ΤI
     Durant, Graham J.; Magar, Sharad; Hu, Lain-Yen
IN
     Cambridge Neuroscience, Inc., USA
PA
     PCT Int. Appl., 103 pp.
SO
     CODEN: PIXXD2
DT
     Patent
LΑ
     English
FAN.CNT 2
                               DATE APPLICATION NO.
     PATENT NO.
                      KIND
                                                                DATE
    WO 9427591 A1
                             19941208 WO 1994-US6008
                                                                 19940527
PΙ
        W: AU, BB, BG, BR, CA, CZ, FI, HU, JP, KP, KR, LK, LV, MG, MN, MW,
            NO, NZ, PL, RO, RU, SD, SK, TJ, UA, US
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            BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG
                                          CA 1994-2163361
                                                                 19940527
     CA 2163361
                        A1
                               19941208
                                          AU 1994-70473
                                                                 19940527
     AU 9470473
                         Α
                               19941220
                       B2
                               19980813
     AU 695337
                       Α
                                          ZA 1994-3744
                                                                 19940527
     ZA 9403744
                               19950426
                            19960---
20030730
    EP 705100 A1 EP 705100 B1
                                         EP 1994-919275
                                                                 19940527
     EP 705100
                       B1
        R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE
     CN 1126434 A 19960710 CN 1994-192610 19940527
                        T
                                          JP 1995-500988
                                                                 19940527
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     JP 08510754
     JP 3610368
                       B2
                               20050112
                    T 20030815
T 20031231
T3 20040501
A 20001114
A 20001128
                                          AT 1994-919275
                                                                19940527
     AT 245977
                                          PT 1994-919275
                                                                19940527
     PT 705100
                                          ES 1994-919275
                                                                 19940527
     ES 2204920
                                          US 1995-458741
                                                                 19950602
     US 6147063
                                          US 1995-458803
                                                                19950602
     US 6153604
```

|      | US 6156741       | A  | 20001205 | US 1995-458506 | 19950602 |
|------|------------------|----|----------|----------------|----------|
|      | JP 2004285073    | A  | 20041014 | JP 2004-140658 | 20040511 |
| PRAI | US 1993-68522    | A  | 19930527 |                |          |
|      | US 1993-156773   | B2 | 19931123 |                |          |
|      | JP 1995-500988   | A3 | 19940527 |                |          |
|      | WO 1994-US6008   | W  | 19940527 |                |          |
| os   | MARPAT 122:96529 |    |          |                |          |
| GI   |                  |    |          |                |          |

$$RR^{1}N - C - N$$

$$RR^{5}n$$

$$R^{6}$$

AB Treatment of the CNS diseases, which involve excitation of nerve cells by agonists of NMDA receptors, comprises administration of substituted guanidines (I; R = R1 = R2 = H, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, aryl, ets; R3 = R4 = R5 = halogen, OH, azido, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, aryl, etc.; n = 0-3) or their salts. The ED80 and the percentage maximum protection against damage to the CNS for some of the I compds. are presented.

```
=> s L4 and labelling
```

1165 LABELLING

16 LABELLINGS

1179 LABELLİNG

(LABELLING OR LABELLINGS)

I

L5 0 L4 AND LABELLING

=> s radiolabel

3686 RADIOLABEL

278 RADIOLABELS

L6 3901 RADIOLABEL

(RADIOLABEL OR RADIOLABELS)

=> s L4 and L6

L7 0 L4 AND L6

=> s imaging compounds

188337 IMAGING

105 IMAGINGS

188383 IMAGING

(IMAGING OR IMAGINGS)

854769 COMPOUNDS

4 COMPOUNDSES

854772 COMPOUNDS

(COMPOUNDS OR COMPOUNDSES)

1715845 COMPDS

2160307 COMPOUNDS

(COMPOUNDS OR COMPDS)

24 IMAGING COMPOUNDS

(IMAGING (W) COMPOUNDS)

=> s L4 and L8

L8

L9 0 L4 AND L8

```
=> s carbon isotopes
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         26883 CARBONS
       1257045 CARBON
                  (CARBON OR CARBONS)
        106338 ISOTOPES
L10
          2885 CARBON ISOTOPES
                  (CARBON (W) ISOTOPES)
=> s L4 and L10
L11 ·
             0 L4 AND L10
=> s radiolabelled compounds
           267 RADIOLABELLED
        854769 COMPOUNDS
             4 COMPOUNDSES
        854772 COMPOUNDS
                  (COMPOUNDS OR COMPOUNDSES)
       1715845 COMPDS
       2160307 COMPOUNDS
                 (COMPOUNDS OR COMPDS)
L12
             6 RADIOLABELLED COMPOUNDS
                 (RADIOLABELLED (W) COMPOUNDS)
=> s L4 and L12
             0 L4 AND L12
L13
=> s labelled compounds
          2605 LABELLED
        854769 COMPOUNDS
             4 COMPOUNDSES
        854772 COMPOUNDS
                 (COMPOUNDS OR COMPOUNDSES)
       1715845 COMPDS
       2160307 COMPOUNDS
                 (COMPOUNDS OR COMPDS)
L14.
            76 LABELLED COMPOUNDS
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=> s guanidine
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          3008 GUANIDINES
         33795 GUANIDINE
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=> s L14 and L15
L16
             0 L14 AND L15
=> s L14 and L4
L17
             0 L14 AND L4
=> s radiopharmaceuticals
L18
          5137 RADIOPHARMACEUTICALS
=> s L18 and L4
L19
             1 L18 AND L4
=> d L19 bib abs
L19 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN
AN
     2004:60459 CAPLUS
DN
     140:111134
     Preparation of phenylguanidine isotopomers for therapeutic use as in vivo
TI
```

diagnosis or imaging of NMDA-mediated disease

```
Brady, Frank; Luthra, Sajinder Kaur
IN
PA
    Hammersmith Imanet Ltd., UK
SO
     PCT Int. Appl., 23 pp.
     CODEN: PIXXD2
DT
     Patent
LA
     English
FAN.CNT 1
     PATENT NO.
                        KIND
                               DATE
                                            APPLICATION NO.
                                                                   DATE
                                            ______
     -----
                         ----
                                -----
                                                                   20030716
    WO 2004007440
                         A1
                                20040122
                                            WO 2003-GB3078
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            CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
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            LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM,
            PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN,
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            KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,
            FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,
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    AU 2003254460
                         A1
                                20040202
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                         A1
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                                           JP 2004-520892
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    US 2005260125
                         A1
                                20051124
                                            US 2005-522204
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PRAI GB 2002-16621
                                20020717
                         Α
                         W
                                20030716
    WO 2003-GB3078
    MARPAT 140:111134
OS
GI
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This invention relates to the preparation of guanidine isotopomers, such as I [R1 = 11CH2R5, (CH2)n18F; R2 = H, C1-4-alkyl; R3 = halogen; R4 = halogen, C1-4-alkyl, C1-4-alkylthio; R5 = H, C1-4-alkyl], for use in diagnosis and tomog. imaging of NMDA-mediated nervous system disease in vivo. Thus, I (R1 = 11CH3, R2 = Me, R2 = 2-Cl, R4 = 3-MeS) was prepared N-alkylation of the corresponding guanidine I (R1 = H, R2 = Me, R2 = 2-Cl, R4 = 3-MeS) with [11C]iodomethane using NaH in MeCN. The prepared guanidines were assayed in rats for biodistribution in body tissue, for radioactivity in blood and plasma, and for NMDA receptor affinity.

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

I

=> s phenylguanidine

639 PHENYLGUANIDINE

79 PHENYLGUANIDINES

L20 670 PHENYLGUANIDINE

(PHENYLGUANIDINE OR PHENYLGUANIDINES)

=> s isotopomers

L21 5515 ISOTOPOMERS

```
=> s L4 and L21
             1 L4 AND L21
L22
=> d L22 bib abs
     ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN
L22
     2004:60459 CAPLUS
AN
DN
     140:111134
     Preparation of phenylguanidine isotopomers for therapeutic use
TI
     as in vivo diagnosis or imaging of NMDA-mediated disease
     Brady, Frank; Luthra, Sajinder Kaur
IN
PA
     Hammersmith Imanet Ltd., UK
     PCT Int. Appl., 23 pp.
SO
     CODEN: PIXXD2
DT
     Patent
     English
LΑ
FAN.CNT 1
                                                                   DATE
                                            APPLICATION NO.
     PATENT NO.
                         KIND
                                DATE
                                                                   _____
                                            ______
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                         _ _ _ _
                                                                   20030716
                         A1
                                20040122
                                            WO 2003-GB3078
     WO 2004007440
PI
         W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
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             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM,
             PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN,
             TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
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                                            US 2005-522204
                          A1
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     US 2005260125
PRAI GB 2002-16621
                                20020717
                          Α
                          W.
                                20030716 .
     WO 2003-GB3078
os
     MARPAT 140:111134
GΙ
```

AΒ This invention relates to the preparation of guanidine isotopomers, such as I [R1 = 11CH2R5, (CH2)n18F; R2 = H, C1-4-alkyl; R3 = halogen; R4 =halogen, C1-4-alkyl, C1-4-alkylthio; R5 = H, C1-4-alkyl], for use in diagnosis and tomog. imaging of NMDA-mediated nervous system disease in vivo. Thus, I (R1 = 11CH3, R2 = Me, R2 = 2-Cl, R4 = 3-MeS) was prepared N-alkylation of the corresponding guanidine I (R1 = H, R2 = Me, R2 = 2-Cl, R4 = 3-MeS) with [11C] iodomethane using NaH in MeCN. The prepared guanidines were assayed in rats for biodistribution in body tissue, for radioactivity in blood and plasma, and for NMDA receptor affinity.

THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD RE.CNT 4

I

## ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> s NMDA compounds

26917 NMDA

2 NMDAS

26917 NMDA

(NMDA OR NMDAS)

854769 COMPOUNDS

4 COMPOUNDSES

854772 COMPOUNDS

(COMPOUNDS OR COMPOUNDSES)

1715845 COMPDS

2160307 COMPOUNDS

(COMPOUNDS OR COMPDS)

L23

0 NMDA COMPOUNDS

(NMDA (W) COMPOUNDS)

=>

---Logging off of STN---

=>

Executing the logoff script...

=> LOG Y

| COST IN U.S. DOLLARS                       | SINCE FILE | TOTAL   |
|--|------------|---------|
|  | ENTRY      | SESSION |
| FULL ESTIMATED COST                        | 109.50     | 281.81  |
|  |            |         |
| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | SINCE FILE | TOTAL   |
| ·  | ENTRY      | SESSION |
| CA SUBSCRIBER PRICE                        | -20.28     | -20.28  |

STN INTERNATIONAL LOGOFF AT 09:14:16 ON 08 JAN 2007